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ABSTRACT

This item consists of three separate "Technical Assistance Guides" combined into one document because they all are concerned with improving access to information for handicapped people. Specifically, the three guides provide: (1) information to enable hearing impaired, visually impaired, and mobility impaired persons to have access to public meetings; (2) information on special devices that can be used to improve communication with hearing impaired persons; and (3) information on steps to enable visually impaired persons to have access to printed materials. The first guide has the following sections: title, purpose, notice of public meetings and requests for special services, access for hearing impaired persons (e.g. provision of interpreters), access for visually impaired persons (e.g. provision of Braille and large print materials), access for mobility impaired persons (e.g. wide aisles for wheelchair access), availability of this document in alternate formats, and resources. The second guide has the following sections: title, purpose, background, availability in alternate formats, resources, and types of assistive listening devices (e.g. audio loop system, infrared systems, AM systems, FM systems, and hard wired systems). Each device is covered in terms of a brief description, major advantages, major disadvantages, and costs. The third guide has similar sections and covers printing factors that affect readability including type size, type selection, line leading, proportional spacing and hyphenation, line width, columns, paragraphing, contrast and color, finish, and color screens and reversals. (DB)

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Technical Assistance Guides:

Access to Public Meetings

Assistive Listening Devices (ALD's)

and

Access to Printed Information by Visually-Impaired Persons

U.S. Department of Justice
Civil Rights Division
Coordination and Review Section

EC 221747

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TECHNICAL ASSISTANCE GUIDE

ACCESS TO PUBLIC MEETINGS

TAG-85-1, R11-88

1. Title

Access to Public Meetings

2. Purpose

This Technical Assistance Guide (TAG) provides information on steps that will enable hearing-impaired, visually-impaired and mobility-impaired persons to have access to public meetings. This TAG does not address the architectural accessi- bility of the facility in which the meeting is held. The facility in which a public meeting is held must be accessible to the extent necessary to permit access to the meeting room. Public meetings are those meetings to which access is not restricted except by the topic of the meeting or the size of the facility. [1]

3. Notice of Public Meetings and Requests for Special Services

Notifying the public about meetings through the newspaper or any other single general medium may not be effective in providing notice to persons with sensory impairments. When giving public notice agencies should ensure that the notification will reach individuals with handicaps who may be interested in attending the meeting. Agencies planning to conduct public meetings should include in all announcements about the meeting, a notice indicating that services of the kind discussed below for disabled persons will be made available. The notice should include the name, address and telephone numbers (both voice and TDD) of a person to contact about these services. The announcement should request that individuals with handicaps inform the meeting sponsor of their need for special services far enough in advance of the meeting to enable the sponsor to secure these services.

The amount of advance notice required and feasible may depend on the nature of the meeting and how much notice the sponsor provides the public.

4. Access for Hearing-Impaired Persons

A. Interpreters should be provided for hearing-impaired attendees. Interpreters who can send and receive sign language fluently and who are skilled at oral interpretation should be provided. It is the respon-

[1] Several other TAG's are also relevant to the topic of access to public meetings. A complete list of TAG's can be found in TAG-87-1 "Section 504 Transition Plan and Self-Evaluation Information", available from the Coordination and Review Section, Civil Rights Division, U.S. Department of Justice, Washington, D.C. 20530, (202) 724-2222 (Voice), (202) 724-7678 (TDD).

sibility of the institution or agency convening the public meeting to provide and pay for interpreter services. It is not the responsibility of the convening agency to pay for any interpreter that the attendee brings to the meeting.

B. There should be at least two interpreters available for each meeting likely to exceed 15 minutes where hearing-impaired persons will be present. A minimum of two interpreters are needed so that one can relieve the other, thus enabling them to maintain their effectiveness.

C. Meeting rooms should be well lighted so that the interpreter can be easily seen by hearing-impaired persons. Hearing-impaired attendees should be able to see the speaker and the interpreter at the same time. If the room in which the meeting is being held is large, seats for hearing-impaired persons should be reserved close to the interpreter.

D. Speakers should be instructed to speak clearly and at a moderate pace to facilitate sign translation. Speakers should also be instructed to clearly identify themselves, either by raising their hands or standing, so that the interpreter and hearing-impaired person can easily identify who is speaking.

E. If audio-visual presentations are made during the meeting, the material should be either signed or captioned. If the presentation is signed, special steps should be taken to ensure that the presentation and the interpreter are visible to the hearing-impaired person at the same time and that the lighting is adequate.

5. Access for Visually-Impaired Persons

A. Meetings rooms should be well lighted.

B. If printed material related to the proceedings is distributed prior to the meeting the material should be made available on tone or speech indexed audio tape if requested.

C. If printed material needs to be read during the meeting in order for attendees to participate effectively in the meeting, then readers for the blind and visually-impaired should be provided.

D. If there will be blind or visually-impaired participants or attendees at the meeting, the sponsor should consider the use of large print and Braille agendas.

E. If a transcript of the meeting is made available to the general public, it should be made available to blind and visually-impaired persons. For example, if a transcript is produced and made available

for public inspection, a tape recording of the proceedings or readers should be made available on request to assist blind and visually-impaired persons in using the document. If meeting transcripts are distributed to the public, tone or speech indexed audio tape copies of the transcript should be made available to blind and visually-impaired persons.

6. Access for Mobility-Impaired Persons

A. The aisles of the meeting room should be inspected prior to the meeting to ensure easy passage by persons using wheelchairs. If the design of the meeting room makes it difficult for mobility-impaired persons to gain full access to the room the meeting sponsor should be prepared, on request, to provide assistance to mobility-impaired persons. For example, if the aisle gradient is too steep to be negotiated independently by some persons in wheelchairs, individuals should be available to push such persons up the aisle.

B. Open, level areas that are not situated along emergency egress routes should be available for persons in wheelchairs. If the meeting is conducted in a sizable assembly area, guidance can be found in the Uniform Federal Accessibility Standards (UFAS) as to how many seats, usable by persons in wheelchairs, should be set aside. See § 4.1.2(18), 41 C.F.R. § 101-19.6, App. A.

C. The entry doors to the meeting room should have clear opening widths of at least 32".

7. Availability in Alternate Formats

This document is available, on request, from the Coordination and Review Section (see address below) in the following formats.

- Audiotape
- Large Print
- Braille
- Computer Disk

8. Resources

A list of resources has been compiled and can be obtained by contacting:

Coordination and Review Section
Civil Rights Division
U.S. Department of Justice
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(202) 724-2222 (Voice)
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U. S. Department of Justice
Civil Rights Division
Coordination and Review Section

TECHNICAL ASSISTANCE GUIDE

ASSISTIVE LISTENING DEVICES (ALD'S)

TAG-85-2, R11-88

1. Title

Assistive Listening Devices (ALD's)

2. Purpose

This Technical Assistance Guide (TAG) provides information on special devices that can be used to improve communication with hearing-impaired persons. It discusses the problems ALD systems are intended to solve or ameliorate and the costs, advantages and disadvantages of different ALD's.

3. Background

There are approximately 13 million hearing-impaired persons in the United States. A significant number of these individuals can benefit from the use of an ALD.

An ALD is a device that picks up sounds (voice, music, etc) at, or close to its source, ampli- fies it and delivers it to the user's ear. An ALD has advantages over conventional amplifica- tion systems. Because the signal to be listened to is the only sound picked up by the system and transmitted to the users's ear the hearing-impaired person's perception of that sound is significantly improved. ALD's can improve interpersonal communication in meetings and other forms of public assembly.

4. Types of Assistive Listening Devices

A. *Audio Loop System*

☛ Description

In an audio loop system, a loop of wire is placed around a seating area and connected to the public address system. Hearing-impaired persons wearing a hearing aid equipped with a telecoil or portable loop receiver are seated in the area surrounded by the wire audio loop. An electrical current flowing through the loop creates a magnetic field that induces another current in the receiving mechanism. The receiver is equipped with an amplifier so that the sound level can be controlled by the hearing-impaired person.

☛ Major Advantages

No special receivers are needed by people whose hearing aids are equipped with telecoils. Prepackaged systems can be quickly and easily installed in small and medium sized spaces and are relatively

inexpensive. A prepack- aged system does not need a professional installer.

☛ Major Disadvantages

Use of the audio loop requires hearing-impaired persons to be seated in one area. The system is vulnerable to electrical interference. Systems for large areas are complex to install and a high powered amplifier is required. Large space systems require skilled professional installation. If the cables are not concealed or covered adequately there is a danger of people tripping en route to or from their seats. Lastly, the labor to install a concealed or aesthetically acceptable large area loop system can be very time consuming and expensive.

☛ Costs

Costs range from $350 for small area coverage up to $2,500 for a large loop and a powerful amplifier. Portable receivers cost about $75 each.

B. *Infrared Systems*

☛ Description

In an infrared system, an infrared emitter is connected to the public address system and invisible infrared light carries the sound to an infrared receiver worn by the listener. The receiver contains an amplifier so the listener can control the sound volume.

☛ Major Advantages

The system is not subject to electrical interference and users do not need a hearing aid equipped with a telecoil. This system has good sound quality and is easy to operate. Users of the system can sit anywhere that is in a line of sight with the emitter.

☛ Major Disadvantages

Large amounts of incandescent light or sunlight in a room produce interference, and receivers must maintain a line of sight with the emitter. Large area systems are relatively expensive.

☛ Cost

The infrared emitter ranges in cost from $150-$1,800. Receivers cost about $120 each. Wall mounts and accessories are additional, and additional emitters are required as room size increases.

C. *AM Systems*

☛ Description

The sound in the public address system is broadcast through the room by an AM transmitter. Users listen through an earpiece or headset plugged into a special AM receiver.

☛ Major Advantages

The system is easy to install and users have the freedom to choose where they want to sit. AM equipment is less expensive than the FM and infrared systems.

☛ Major Disadvantages

AM systems are vulnerable to considerable interference. AM systems do not perform well in buildings with substantial amounts of structural steel.

☛ Costs

Transmitters cost from $350-$1,600 and receivers cost from $10 to $35.

D. *FM Systems*

☛ Description

A signal is transmitted by an FM transmitter plugged into the public address system to a portable receiver. Receivers resemble a small pocket radio connected by a cord to an earplug or headphones. A neckloop can be used by persons with a hearing aid equipped with a telecoil.

☛ Major Advantages

This system produces excellent sound quality and users have the freedom to choose their seating location. The system is not subject to electrical interference and is simple and inexpensive to install.

☛ Major Disadvantages

The system is more expensive to purchase than the AM system or an audio loop system.

☛ Costs

Transmitters range in cost from $500-$2,000 and receivers range in cost from $15-$350 each.

E. *Hard Wired Systems*

☛ Description

Each listener location is wired directly to the source of amplified sound. This requires that a number of jacks with volume controls, be installed at predetermined locations where the user can plug in an earpiece or headset.

☛ Major Advantages

In newly-constructed facilities this system is easily installed and is not subject to electrical interference.

☛ Major Disadvantages

Hearing-impaired persons must sit in predetermined locations to use the system. Installation in an existing facility can be expensive and installation of additional locations may require re-engineering the system to maintain the proper impedance match.

☛ Costs

The cost of these systems varies greatly. Costs can be considerably reduced if the system is installed when the facility is constructed.

5. Availability in Alternate Formats

This document is available, on request, from the Coordination and Review Section (see address below) in the following formats.

- Audiotape
- Large Print
- Braille
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6. Resources

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TECHNICAL ASSISTANCE GUIDE

ACCESS TO PRINTED INFORMATION BY VISUALLY-IMPAIRED PERSONS

TAG-85-3, R11-88

1. Title

Access to Printed Information by Visually-Impaired Persons

2. Purpose

This Technical Assistance Guide (TAG) provides information on steps that will enable visually-impaired persons to have access to printed materials.

3. Background

Access to printed information for millions of visually-impaired Americans is significantly restricted because the printed information is not readable. In general, the readability of printed material may be defined in terms of those characteristics that determine the speed, accuracy and ease with which it may be read. Often the limitations of visually-impaired persons are not considered by editors when they select type size, paper color, and other factors that determine readability.

4. Printing Factors that Affect Readability [1]

A. *Type Size*

The size of type affects readability. The unit of type size is called a point. The American point is about 1/72 inch in height, making a 12 point letter about 1/6 inch high. The use of small point type (six to eight points or smaller), commonly found in newspapers and footnotes, significantly affects the readability of the document. The following recommendations should assist in producing printed material that is more easily read by visually-impaired persons.

- Twelve point type is needed by persons with marginal difficulty in reading (a substantial percentage of the population 50 years of age and older has difficulty reading).
- A minimum of 14 point is needed for those persons with seriously impaired vision.

B. *Type Selection*

There are many type faces or styles. Some type faces are more readable than others. The following recommendations should help

1 This discussion is based on an article by Jack B. Ralph, M.A., entitled "A Geriatric Visual Concern: The Need for Publishing Guidelines", Journal of the American Optometric Association, Vol. 53, Number 1, January 1982.

editors select the type that is more easily readable by visually-impaired persons.

- Type faces that use the largest amount of available space for the character (letter) should be selected.
- Boldface and italic type should be used sparingly, and should not be used in long passages.
- All capital letters should not be used for text.
- Serif face type should be used for general text up to 13 point size. Sans serif should be used in 14 point and larger and for captions, headings, and reversals.

C. *Line Leading*

Line leading (pronounced "ledding") is the space between lines of type. With print smaller than 11 point a decrease in line leading will decrease readability.

In order to maximize readability, no more than two lines of leading should be used. With 11 or 12 point type one or two lines of leading can be used and with print smaller than 11 point, two lines of leading should always be used.

D. *Proportional Spacing and Hyphenation*

A readability problem is created with typewriter type when a uniform width is used for all letters. Letters in our alphabet are not the same width. The letter "i", for example, is less wide than the letter "w". American Typewriters type, the standard type face used on many typewriters, allows the same amount of width for the letter "i" as for the letter "w". The use of extra white space on each side of the letter "i" and other narrow letters, and the elimination of all white space on each side of the letter "w", decreases readability. Proportional spacing allows for adjustments between letters to eliminate unnecessary white spaces and to allow extra space for wider letters. IBM Modern Type is a type style with proportional spacing. Because proportional spacing increases readability, its use is recommended.

Hyphens break up words and require the reader to remember the last syllable on the previous line and refocus on the remaining word part on the next line. Hyphenation increases the problems that persons with limited vision have reading and understanding printed material. Therefore, hyphenation of right margins should be avoided.

E. *Line Width*

The width of a line from left to right is measured in picas. There are six picas to an inch. Generally there is greater risk of loss of readability when wider lines are used. Line width of 11 or 12 point type should not exceed 36 picas (six inches) for single column text.

F. *Columns*

If multiple columns are used, columns should not be more than 18 picas wide (three inches) and separations between are better with 1/2 pica on each side of a vertical rule or line.

G. *Paragraphing*

Paragraphs should start with either an indent for the first line of the paragraph or an extra space between paragraphs if block style is used. Indenting is more effective. Inner margins in a text book or in pamphlets of more than 20 pages should be larger than the outer margins.

"Wrap" and "run around" irregular width lines as a margin should be avoided. In some advertisements, and even in the layout of some magazine articles, a figure or a photo is printed in the center of the page with reading material running along side, above, and below the figure or photo. The typesetting technique for the reading material is to follow closely the irregular edges of the figure or photo producing different line widths and irregular right and left margins. This technique decreases readability.

H. *Contrast and Color*

In combining print and background colors, care must be taken to produce the maximum brightness contrast between print and background. The printer should concentrate on brightness contrast. Relying on the following recommendations will improve the readability of the printed material by maximizing the brightness contrast between print and background. Other combinations of color values may be used but as one moves away from the parameters established below, brightness contrast is reduced and readability may be affected.

- Black ink on white or pastel paper is preferred. If colored print and paper are used, two shades of the same color should be avoided and a light color should be used for the background.

- Black ink should not exceed a Munsell Value [2] of 2.18/, which is equivalent to a Government Printing Office (GPO) luminance of 3.6%. Paper used with black ink, should have a minimum Munsell value of 8.6/ which is equivalent to a GPO luminance of 70.37%.

- Colored ink should not exceed a Munsell value of 2.5/, which is equivalent to a GPO luminance of 4.61%. Paper, used with colored ink, should have a minimum Munsell value of 8.9/ which is equivalent to a GPO luminance of 76.53%.

I. *Finish*

Paper with a matte finish is preferable to "shiny" or coated paper. If coated paper must be used, paper that is off-white is preferable to other colors.

J. *Color Screens and Reversals*

Readability problems can occur when screened inks are used to place reverse reading material against a colored background. Frequently there is not enough contrast between the reversal and the background of screened colored ink. Relying on the following recommendations will improve the readability of reversals by maximizing the brightness contrast between print and background. Other combinations of values may be used but as one moves away from the parameters established below, brightness contrast is reduced and readability may be affected.

- The minimum size type in the reversal letters should be 11 point of medium or bold sans serif.

- With black or colored ink lettering on a screened color background the minimum Munsell value of the screened color background should be 8.9/, which is equivalent to a GPO luminance of 76.53%

- With white reversal lettering on a screened color background the maximum Munsell value of the ink should be no more than 2.5/, which is equivalent to a GPO luminance of 4.61%

[2] Munsell Color, 2441 North Calvert Street, Baltimore, MD 21218 (301) 243-2171. The Munsell system of color notation identifies color in terms of three attributes: hue, value and chroma. The Munsell notation for color value is 8.9/, 2.5/, etc.

- With reversals against a screened background, the reversal lettering should have a minimum Munsell value of 8.9/, which is equivalent to a GPO luminance of 76.53%

- The colored ink used in the reversal for the background can bleed into the letters, thus reducing contrast. Bleeding should be kept to a minimum.

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